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THE USE OF DOP/PVC PLASTISOL AS EQUIVALENT-TISSUE TO OPTIMIZE THE RADIATION THERAPY OF PATIENTS WITH CANCER

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The cancer treatment has utilized of high energies of X rays (as produced by megavoltage electron accelerators) and gamma rays from cobalt 60 source. One typical characteristic these radiations is that the dose increases when they penetrate into the patient skin reaching a maximum value in the depth from 0.5 to 3.0 cm. Sometimes, in radiation therapy of superficial tumor, it is necessary to displace the maximum dose to the skin surface, either to maximize the surface dose, or not to damage structures located behind the tumor. This is achieved by adding flexible sheets and transparent equivalent-tissue material, with regards scattering and absorption of radiation. It was used plastisol as the equivalent-tissue material, which is basically made of polyvinyl chloride (PVC) resin dispersed in a plasticizer, dioctyl phthalate (DOP). The test of dose absorption, mass and energy attenuation coefficient suggest that this material is suitable to be equivalent-tissue. This material has been used with success at two years in the Center for Women's Health (CAISM) of the Clinical Hospital of UNICAMP.

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